

*A Colorado professional learning series
based on the book*

Equipped for Reading Success

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Developed in collaboration with the Colorado Department of Education



COLORADO
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Welcome back. We will continue our study of Dr. Kilpatrick's work.



Module Five

Chapter 4:

Phonological Awareness and Sight Word Learning:
The Need for Phoneme Awareness



Goals for Module 5

- Understand the role phoneme awareness plays in word retrieval
- Revisit and clarify the term “sight word.”
- Understand that word recognition is NOT based on visual memory
- Be able to define a meaningful letter string
- Understand what makes letter strings meaningful, and how they are anchored into permanent memory
- Understand the concept of the *alphabetic principle*

Read the learning goals for Module 5



Sight Words



Research emphasizes one meaning of the term *sight word*:

Phoneme

awareness plays

a role in

building a sight

vocabulary

“A sight word is a familiar written word that is recognized instantly, automatically, and effortlessly, without sounding it out or guessing. It does not matter if the word is phonically regular or irregular. The point is that it is immediately recognized. A sight vocabulary word refers to all of the words a student knows instantly and automatically”.

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We know from previous learning that phoneme awareness is critical to the process of reading and storing words into permanent memory. Usually when educators use the term sight vocabulary, they are referring to irregular words that cannot be phonically decoded. Researchers of orthographic learning have a different definition. The manual states: A sight word is a familiar written word that is recognized instantly, automatically and effortlessly, without sound it out or guessing. It does not matter if the word is phonically regular or irregular. The point is that it is immediately recognized. A sight vocabulary word refers to all of the words a student knows instantly and automatically. Kilpatrick goes on to explain why our previous beliefs that “sight words” are stored in our visual memories, are incorrect.

What Scientists Used to Think About How We Store Words



Let's look at what scientists used to think about how we store words. Many educators believe these old theories are true and still apply to student learning.



Myth Buster

- Until recently, the belief was that we store words by having a visual image of every word we know.
- This is based on intuitive evidence, **not science**.
- The theory is when we see words, we access them from a visual storage bank. As soon as we see the words, they look familiar, so we recognize them like how we recognize faces or objects. This is false.

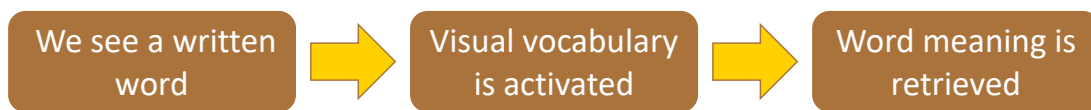


Figure 4.1
A Traditional View of Sight-Word Memory Retrieval
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A belief among educators was, and in some cases, still is, is that our visual memory system is the system that plays a critical role with input and storage of words. It is almost universally believed within the education community. However, not only does this view lack any scientific evidence, there is much clear evidence demonstrating that it is not true.

Challenging the Belief That Word Recognition is Based on Visual Memory



Chapter 4: pgs. 27 – 30

A courageous move...



And so...

- As teachers, we assume that if students have frequent exposures to words, they will learn them.
- **NOT TRUE!**
- Children with reading problems cannot efficiently remember words, and once learned, they are easily forgotten.
- We mistakenly blame their visual memories.
- Average readers learn words very quickly.
- Good readers need only 1-5 exposures to new words to learn them.
- Once a new word is learned, good readers don't forget them.



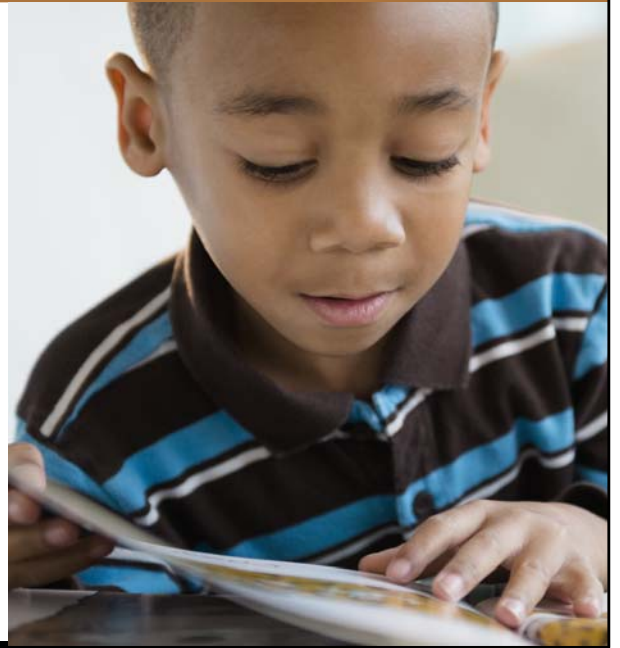
When a student reads fluently and effortlessly, we know phonic decoding is not being used. Clearly they are not sounding out each word and blending the sound. We know from science that they are not retrieving a visual image. So what is happening that contributes to this process of immediate word retrieval?



Let's Be Clear

"I believe this assumption that we store words based on visual memory is a major reason why we have widespread reading difficulties in our country. *Until we properly understand how to promote permanent word storage, we will continue to have many weak readers*".

~ David Kilpatrick, PhD



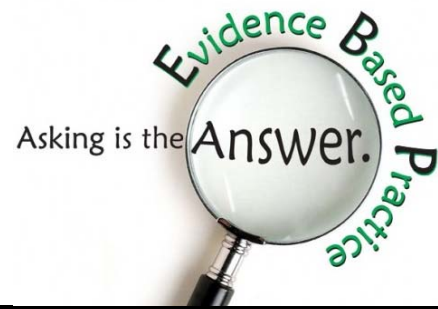
Another quote from Dr, Kilpatrick that makes us think about our practice, and knowledge of research...



Scientific Evidence

Research shows **we don't use visual memory for word recognition:**

- Mixed case experiments have demonstrated we do not retrieve words from a visual memory bank.
- We have no evidence to support the notion that we have dozens of visual memories of each of 40 – 60 thousand words in sight vocabulary of literate adults, based upon the many different fonts, cases, and handwriting styles we see when we read.
- It was discovered 130 years ago that **word recognition** is faster than **visual recognition of objects**, showing that visual object recognition and word recognition are **different processes**.



It is important that we pay attention to the evidence, and not go on intuition to drive our instruction. So let's look at some more evidence...



More Scientific Evidence



- Children with reading disabilities **perform as well as good readers** on visual memory tasks.
- There is a large statistical **correlation between phoneme awareness and sight vocabulary.**
- If word reading were based on visual memory, why would it correlate strongly with a phonological skill like phoneme awareness, but not visual memory skills?

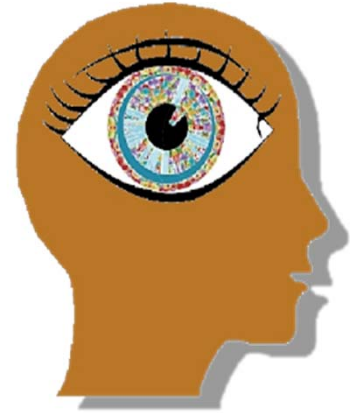
H-m-m-m-m

I want you to think about the following scientific evidence that refutes the visual memory theory of reading.



Visual Memory Overrated

- Brain scans indicate that regions of the brain activated when performing a visual memory naming-task **differ** from regions activated when reading words.
- Research on the deaf population indicates that most high school students graduate with a 3rd grade reading level. If reading were based on just visual memory, those who are deaf should not consistently have reading impairments.
- We temporarily forget names of objects or people, but we do not forget the printed words we know, because we are using a **different process to store and retrieve those words**.



“We overrate our visual memory, plain and simple”.

~ David Kilpatrick, PhD

Based on all of this, it can be seen that “we overrate our visual memory, plain and simple” How do we know that visual memory is overrated? And does it play any role in reading? Let’s look:

Does Visual Memory Play Any Role in Reading?



Let's find out exactly what the role visual memory plays, if any, in reading.



Visual Memory in the Reading Process



Visual memory **does** play a role in other aspects of reading:

- **Alphabet recognition**

- learning the alphabet letter names and sounds is based on visual-phonological memory.

- **Reading comprehension**

- important for understanding and remembering is creating a good visual-spatial representation of what is happening in text.

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Visual memory does play a role in reading, even though it is a smaller and different role than previously believed.

the	I
a	to
is	my
go	me
like	on
in	so

The Discovery of Orthographic Mapping

Critical to the understanding of permanent word storage and retrieval is the discovery of orthographic mapping.



Orthographic Mapping...

- is a mental process we use to permanently store words.
- is the process we use to take an unfamiliar printed word and turn it into a recognizable sight word.
- occurs naturally for many students.
- is also referred to as *direct mapping*, *unitization*, *the bonding hypothesis*, *the amalgamation hypothesis* and *the representation hypothesis*.
- was developed by Dr. Linnea Ehri.



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Kilpatrick says that understanding orthographic mapping is important because knowing how words are stored, should determine what we teach, and how we teach it. Let's look at what we know so far about orthographic mapping:



The Process

When we talk, words are represented by a sequence of syllables that contain sounds. Initially, we learn to recognize spoken syllables. At age 6-7 years, we start to recognize the sound sequences as familiar words, if we have an awareness of phonemes in the word. It happens very fast, and the process looks like this:

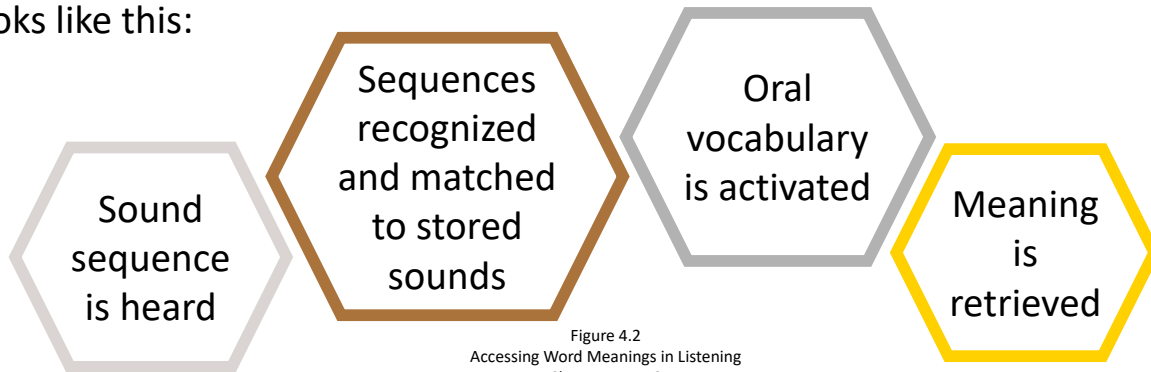


Figure 4.2
Accessing Word Meanings in Listening
Chapter 4: pg. 2

Here is the actual process that takes place when oral vocabulary is activated.



Letter Strings

If a student does not have phoneme awareness, letter strings are not meaningful and are difficult to remember. Some students feel they are memorizing random strings of letters.



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The letter sequences in words are meaningful because the letter order is designed to match the order of the sounds in spoken words. Let's look at what Dr. Kilpatrick defines as meaningful and familiar letter strings. Notice the connection to phonemic awareness. Kilpatrick believes that many teachers have heard that phonemic awareness is important, but they often don't understand WHY.



The Importance of Phoneme Awareness

Good Readers	Poor Readers

Chapter 4: pgs. 34 – 35

The way that a reader recognizes a sequence as meaningful is that the letter sequence of the words, match the sequence of sounds in those words. If the reader has not developed an awareness of phonemes in a word, the words are meaningless, and cannot be remembered. Let's look at some of the critical attributes of good vs poor readers... Note the differences:



Alphabetic Principle



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- The *alphabetic principle* is the idea that children realize that written letters match up with the phonemes in spoken words.
- Early literacy skills and/or phonics instruction help facilitate this discovery.
- Without the combination of **strong phoneme awareness** and **solid letter-sound skills**, it is very difficult to develop the *alphabetic principle*.

Terms like the alphabetic principle are important terms of our profession as literacy educators. It is important for us to know them and use them within our professional conversations and decisions we make regarding children. When a child understands what the Alphabetic Principle is, things open for them in terms of learning to read.

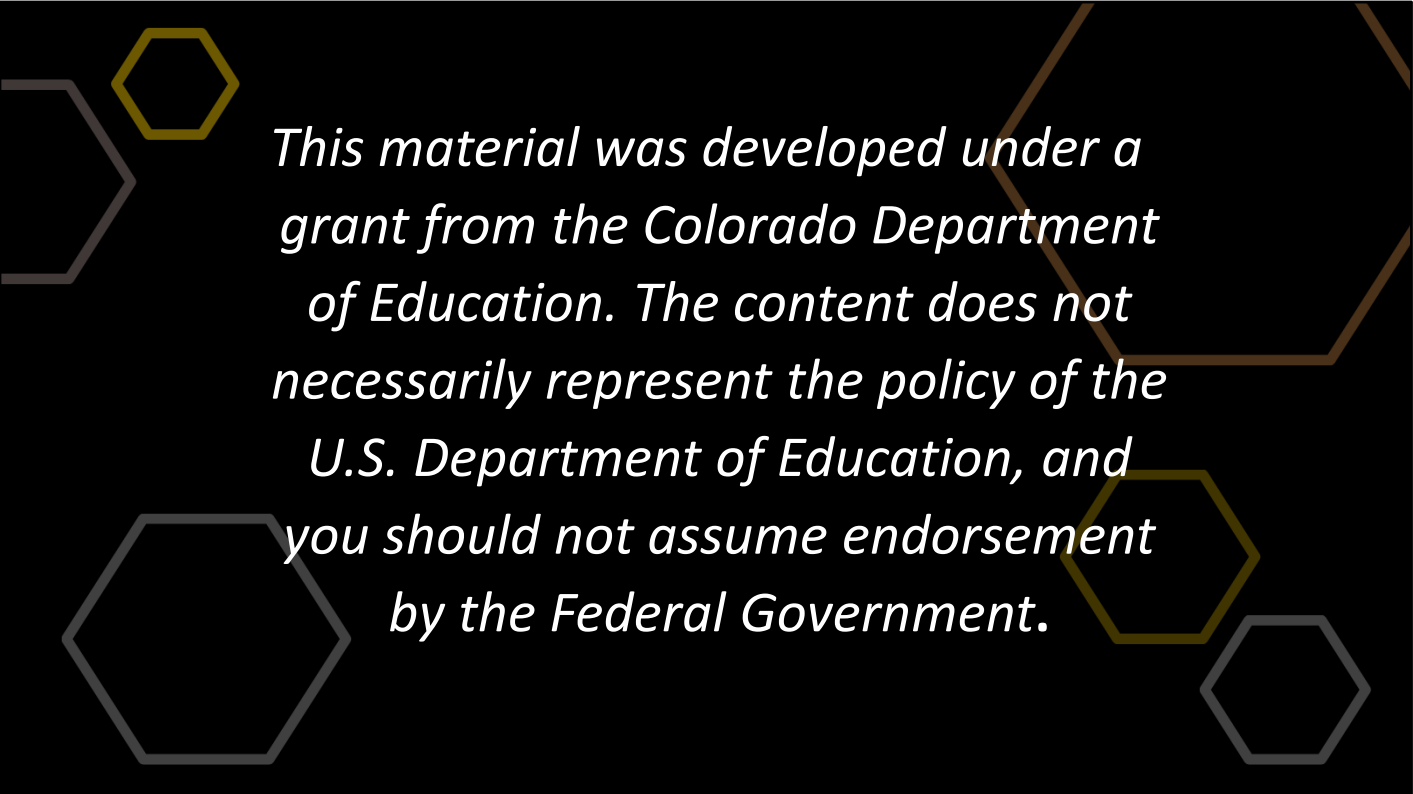


What's ahead in Module 6

- Making Letter Strings Familiar: How We Map
- Clues from Eye Movement Research
- The Relationship between Phoneme Awareness and Orthographic Mapping
- The 3 Critical Skills Needed for Orthographic Mapping



In Module 6, we move on to the following topics;
Making Letter Strings Familiar: How We Map
Clues from Eye Movement Research
The Relationship between Phoneme Awareness and Orthographic Mapping
The 3 Critical Skills Needed for Orthographic Mapping
Sounds like a great Module. See you then!



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